

70.8% ($p=0.46$). Coronary perforations (10.5 vs 3.0% , $p<0.01$) and need for pericardial drainage (3.6 vs 1.0% , $p=0.02$) were more frequent among retrograde compared to antegrade approach. However, need for emergency cardiac surgery were similar (0 vs 0.9% , $p=0.57$). Retrograde CTO PCI was related with longer procedure time (149.7 ± 58.6 vs 80.7 ± 40.2 min, $p<0.01$), fluoroscopy time (75.8 ± 39.1 vs 42.5 ± 99.8 min, $p<0.01$) and higher contrast dose (385 ± 180 vs 257 ± 158 ml, $p<0.01$). The incidence of in-hospital non Q-wave myocardial infarction (0.7 vs 0.1% , $p=0.20$) and death were similar (0.7 vs 1.1% , $p=0.66$). The 3-year cumulative incidence of myocardial infarction (2.6% vs 1.3% , $p=0.81$) and cardiac death (4.8% vs 4.7% , $p=0.83$) were similar between retrograde and antegrade approach. Among patients with successful CTO PCI, the 3-year cumulative target lesion revascularization (TLR) rate was significantly higher in retrograde approach compared with antegrade (12.6% vs 6.9% , $p=0.045$).

Conclusions: Higher incidences of coronary perforation and pericardial drainage, but no emergency cardiac surgery were observed after retrograde CTO PCI. Although long-term TLR rate was higher, retrograde CTO PCI was associated with acceptable procedural success rate and similar short and long-term adverse events compared with antegrade CTO PCI.

TCT-367

Long Term Clinical Outcome After PCI for Chronic Total Occlusion CTO: Does Procedural Success Matter?

Francesca Sanguineti¹, Thierry Lefevre¹, Stephen O'Connor¹, Yusuke Watanabe¹, Philippe Garot², Talal Harb¹, Yves Louvard¹

¹Institut Cardiovasculaire Paris Sud, Générale de Santé, Massy, France, ²Institut Cardiovasculaire Paris Sud, Générale de Santé, Quincy, France

Background: Whether successful PCI of a coronary CTO is associated with improved survival is the subject of debate. Using a large prospective database of patients treated for CTO, we sought to compare long-term outcome of patients on the basis of success/failure of the index PCI procedure.

Methods: Between 2004 and 2012, a total of 1,343 consecutive patients underwent PCI for CTO in our centre (14 operators). We compared major adverse cardiac events (MACE) including cardiac death, target vessel revascularisation (TVR), and myocardial infarction (MI) in patients with successful versus failed PCI at a median follow up of 4.1 years (IQR: 2.4-6.5 years). Procedural success was defined as achievement of residual stenosis $<50\%$ with TIMI-3 flow in the target vessel.

Results: Successful treatment of CTO by PCI was achieved in 1000 (74%) patients. These patients were younger (63 ± 11 vs. 65 ± 11 respectively $p=0.02$), had lower rates of hypertension (56.1% vs. 66.8% $p<0.01$), previous MI (19.5% vs. 29.2% $p<0.01$) and were more frequently treated for left anterior descending artery CTO (33.2 vs. 23.0% , $p<0.01$) than those in whom PCI success was not achieved. However, left ventricular ejection fraction and diabetes mellitus were similar between groups. PCI success was associated with significantly lower MACE among patients with successful PCI (16.7 vs. 22.2% , $p=0.0235$) driven mainly by lower rate of cardiac death at follow up (4.2 vs. 11% , $p<0.0001$). Independent predictors of lower cardiac death by multivariate analysis were: successful PCI (HR: 0.42, 95% CI: 0.27-0.67, $p<0.01$), absence of previous MI (HR: 1.68, 95% CI: 1.03-2.74, $p=0.04$) and younger age (HR: 1.05, 95% CI: 1.03-1.08, $p<0.01$).

Conclusions: In this large cohort of patients treated by PCI for CTO, successful revascularization was associated with improved clinical outcome at long-term follow-up. This was driven by lower cardiac mortality rates among these patients.

TCT-368

Long-Term Clinical Outcome in Elderly Patients (≥ 75 years) Versus Younger Patients (< 75 years) Undergoing PCI for Chronic Total Occlusion

Stephen O'Connor¹, Thierry Lefevre¹, Francesca Sanguineti¹, Yusuke Watanabe¹, Thomas Hovasse¹, Thierry Untersee², Marie-Claude Morice¹, Hakim Benamer¹, Philippe Garot², Yves Louvard¹

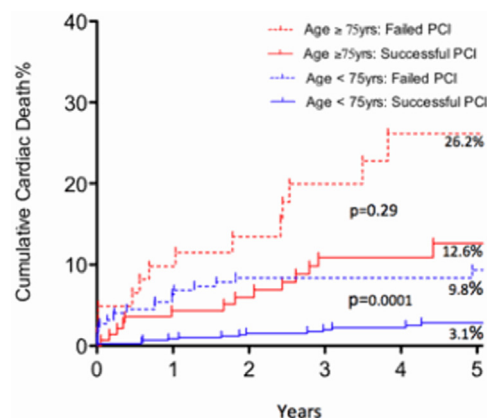
¹Institut Cardiovasculaire Paris Sud, Générale de Santé, Massy, France, ²Institut Cardiovasculaire Paris Sud, Générale de Santé, Quincy, France

Background: To assess the procedural success rate and the long-term clinical impact of percutaneous coronary intervention (PCI) for chronic total occlusions (CTO) in elderly patients.

Methods: A total of 1,343 consecutive patients with underwent PCI for 1,432 CTO lesions between Jan 2004 and Jan 2012 at our center. Outcomes including procedural success and major adverse cardiac events (MACE) and its components, cardiac death, myocardial infarction and target vessel revascularization between patients aged ≥ 75 and patients aged < 75 years were compared.

Results: A total of 253 patients (19%) were aged ≥ 75 years. Compared to patients < 75 years, elderly patient were more commonly female (20% vs. 11.8% , $p<0.0001$) and presented most commonly with left anterior descending coronary artery CTO (41.5% vs. 28.5% , $p=0.001$). Procedural success rates were similar in both groups (74.9% vs. 72.7% , $p=0.48$). Median follow-up was 4.1 years (IQR: 2.4-6.5 years). MACE rates after successful versus failed PCI were 20.9% versus 29.8% in the elderly ($p=0.15$) and 21.0 versus 24.1% in younger patients ($p=0.12$). In elderly patients, this trend in reduction in MACE after successful PCI was driven by a significant reduction in cardiac mortality (Figure). There was also a significant reduction in all-cause mortality (21.1% vs. 35.9% , $p=0.02$) and no significant differences in the rate of MI (2.8% vs. 1.6% , $p=0.597$).

Conclusions: PCI for CTO has similar success rate in the elderly (≥ 75 years) and is associated with a significant reduction in cardiac mortality when success is achieved.



TCT-369

Long Term Clinical Outcome and Routine Angiographic Follow-up After Successful Recanalization of Complex True Chronic Total Coronary Occlusion With a Long Stenting Length. A Single Centre Experience

Karl Isaza¹, Antoine Gerbay², Norbert Mayaud¹, Mohamed H. Sabry¹, Laure Richard¹, Alexis Cerisier¹, Michel Lamaud¹, Hazem Khamis¹, Antoine Da Costa¹

¹University of Saint Etienne, SAINT ETIENNE, France, ²University of Saint etienne France, Saint Priest, France

Background: Routine follow-up angiogram data after successful recanalization of chronic total coronary occlusions (CTO) with a long total stent length (SL) are lacking. In the present study, we evaluated clinical and angiographic outcomes after successful recanalization of CTO with implantation of a long total SL.

Methods: Routine follow-up angiogram were performed at 6 months after successful recanalization of 113 CTO (antegrade approach in 81% and retrograde approach in 19%) with a long SL (≥ 20 mm) in 108 consecutive patients.

Results: Mean number of stents was 3.8 ± 1.8 and mean total SL was 76 ± 33 mm (range 20-174 mm). Drug-eluting stents (DES) were used in 106 lesions with sirolimus-eluting stents (SES) in 100. Instant total reocclusion occurred in 2 DES lesions (1 SES and 1 DES non-SES). Restenosis rate was 18% in DES vs 71% in bare metal stents group ($p=0.004$). In the 100 SES sub-group (total SL 79 ± 33 mm, range 23-174 mm and mean number of stents 3.9 ± 1.8) restenosis rate was 18%; a younger age and a longer total SL were found to be independent predictors of restenosis (HR 0.939, 95% CI 0.885-0.996, $p=0.035$ and HR 1.017, 95% CI 1.00-1.03 $p=0.045$, respectively); restenosis type was diffuse in only 11% and 89% were successfully treated by repeat percutaneous coronary intervention. During a median follow-up of 2 years (interquartile range: 1 to 4.3 years), major cardiac events other than those angiographically driven at routine follow-up angiogram occurred in 3 patients (cardiac surgery at 7, 8 and 9 months, respectively).

Conclusions: Angiographic restenosis rate remains acceptable in patients with complex CTO successfully treated by a long total length of DES and restenosis can be successfully treated by repeat percutaneous coronary intervention in the vast majority of cases.

TCT-370

Impact of Chronic Total Occlusions on Mortality in Patients Presenting With Acute Coronary Syndromes

Lucas Labine¹, David A. Hildebrandt¹, Stephanie Rutten-Ramos¹, Meghan Lardy¹, Michael Claussen¹, Ross Garberich¹, M Nicholas Burke¹

¹Minneapolis Heart Institute Foundation at Abbott Northwestern Hospital, Minneapolis, MN

Background: Chronic Total Occlusions (CTOs) are commonly encountered in patients (PTs) with Acute Coronary Syndromes (ACS). It has been reported that the presence of a CTO is associated with increased mortality in PTs presenting with ST elevation Myocardial Infarctions (STEMI). It is less clear if this same association is true for PTs presenting with non-STE ACS (NSTEMI/ACS).

Methods: The Minneapolis Heart Institute has developed standard treatment protocols for STEMI (Level 1, L1) and NSTEMI/ACS (Level 2, L2) PTs. From 2007-2011, 2062 sequential STEMI PTs and from 2009-2012, 827 sequential NSTEMI/ACS PTs who underwent angiography were evaluated for the presence of at least one CTO in a major coronary vessel. In-hospital, 30 day, and 1 year mortality were compared between PTs who did and did not have a CTO.

Results: See table below: